

## I. GENERAL

### Scope of Work

Furnish materials, labour, plant, equipment, related items and services necessary for the supply, complete fabrication and installation of glazed skylight aluminum framing as shown on the drawings, required by job conditions and specified herein.

(Note: Important items to be included wherever possible)

1. UV radiation v/s glass unit sealant - double seal design, sealants & compatibility of materials.
2. Structural glazing - sealants, compatibility of materials and other related items.)

### Work Not Included

Structural support for the system, steel and other embeds in concrete or masonry, interior moulding, closure or trim as well as roof membrane and flashing unless specifically detailed and called out as such.

(Specifier List of Other Exclusions)

### Related Work Specified Elsewhere (Specifier List)

### Submittals

### Shop Drawings

Prior to fabrication submit shop drawings showing frame elevations, full size details as far as practical, all dimensions, coordination with related work, provision for thermal expansion and main structure deformations and tolerances, sealing and caulking joints and their sizes, material and installation notes as well as all necessary references to local Building Code requirements.

### Samples

Before any work is fabricated, all requested representative and properly labeled samples, including specified products with their finishes, shall be submitted to the Architect for his approval.

## II. PRODUCTS

### Glazing System

- ° The system must allow for full integration with the building envelope, utilize the Rain Screen Principle Design.
- ° A pressure equalized, air baffled at its exterior vent point, inner drainage system and an interior condensation water collecting gutter are mandatory.
- ° Aluminum framing shall be **6600 Series**, thermally insulated, as manufactured by **Aluminex**
- ° The system shall be outside-glazed, able to accommodate 25.4mm/ 1" sealed units, 6.4mm/ ¼" single glass, as specified and shown on the architectural drawings.
- ° The profile standard dimensions shall be: 63.5mm/ 2.5" wide and as deep as required by load and span conditions. If required, steel reinforcing shall contribute to the aluminum framing structural capacity.
- ° Extrusions standard dimensions shall be: 50.8mm/ 2" wide and as deep as required by load and span conditions.
- ° If system is not self supporting, interior steel structure (by others) will add to the glazing system overall depth.
- ° Glass retention shall be (one of the following - Specifier Selection)
  - exterior pressure plate throughout, dry-dry glazing or
  - vertical pressure plate (at rafters) and horizontal structural glazing (at purlins).
- ° Whenever substitute systems and/or products are considered, supporting data must be submitted ten (10) days prior to bid date to allow for valid comparison.

### Performance

- ° The minimum requirements shall be based on the following ASTM test standards: E-283 Air Infiltration, E-331 Water Penetration, and E-330 Structural Performance with L/200 or 19mm / 0.75" (whichever is less) deflection limitations. AAMA 1502.7 Condensation Resistance Test is applicable.

- ° Expected deformation and (seismic) movement allowances shall be referred to the structural design of the building.

### Materials

- ° Extruded aluminum shall be AA 6063 T5, Fy = 110 MPa / 16 KSI, AA 6063 T6 Fy = 170 MPa/ 24 KSI, and for major structural members AA 6061 T6 Fy = 240 MPa/ 35 KSI or AA 6351 T6 Fy = 255 MPa/ 37 KSI-alloy and temper minimum, or other as required by the Code and Standards, able to meet or exceed structural and finishing criteria as specified.
  - ° Any defects impairing strength, durability or appearance are not acceptable.
  - ° Sufficient strength and size fasteners shall be made of corrosion-resistant and compatible material such as cadmium or zinc plated carbon steel type 302 or 304, or aluminum.
  - ° Anchoring brackets (U or L), structurally adequate, shall be extruded aluminum, or formed aluminum or steel, all painted to match the framing.
  - ° Anchoring fastener locations and minimum penetration to the main structure materials shall follow manufacturer's specifications.
  - ° Dissimilar materials shall be separated with approved bituminous paint or spacers, to prevent any galvanic action (corrosion).
  - ° Glazing gaskets shall be dense extruded elastomeric rubber such as Neoprene, EPDM, Silicone or other compatible materials.
  - ° Glazing profiles shall be designed and sized to work with the system and properly serve glazing rabbet assembly providing uniform pressure in the range of 1.05 to 1.70 kN/m / 6 to 10 lb/in.
  - ° Setting blocks must be properly sized (L mm = 25 mm/ 1" per each 1 m<sup>2</sup>/ 10 sqft of glass, but not less than 100 mm/ 4"), placed at 1/4 points, and compatible with the insulating glass sealant.
  - ° Materials in contact must be compatible.
- Use of any organic materials (i.e. wood) in the assembly is not acceptable.

### Finish

All exposed surfaces shall be free from defects, scratches and serious blemishes. Aluminum shall receive one of the following available finishes specified by the Architect:

- i) Standard commercial clear anodic coating integral colour (02),
- ii) Standard commercial bronze hardcolour anodic coating (04),
- iii) Optional anodic coating finishes are light bronze or black,
- iv) Other paint qualities and colours in baked enamel - Specifier selection

## III. EXECUTION

### Fabrication

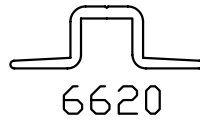
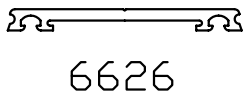
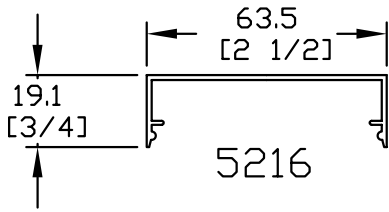
- ° Fabricate and assemble in strict accordance with the approved shop drawings and manufacturer's published recommendations.
- ° The System shall allow for conventional glazing on four (two) sides with projecting pressure plates and snap-on cap where required (and structural glazing on two other sides), with glass hard bite not less than 12mm/ 0.5".
- ° Aluminum purlins and rafters shall be connected accurately to each other by standard aluminum concealed retainer, air sealed to assure tight junction joints as well as for thermal expansion.
- ° Resilient glass setting must be achieved by use of applicable gaskets and/ or spacers.

### Installation

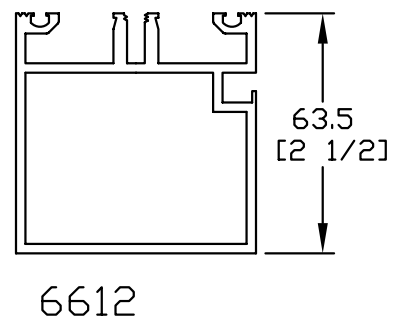
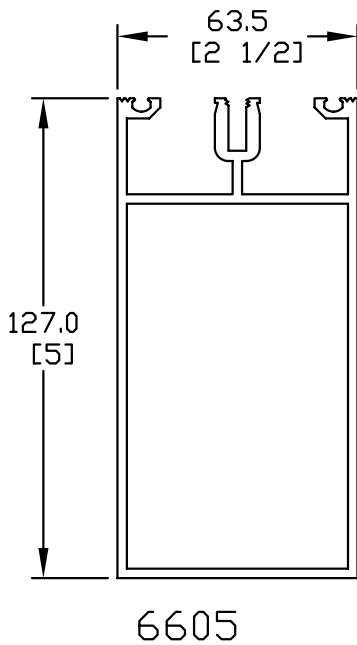
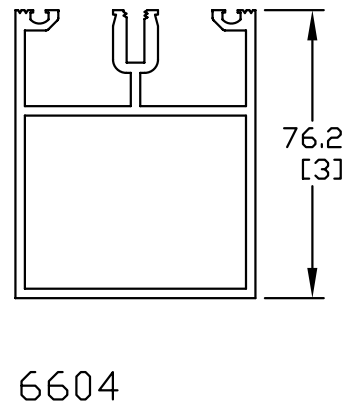
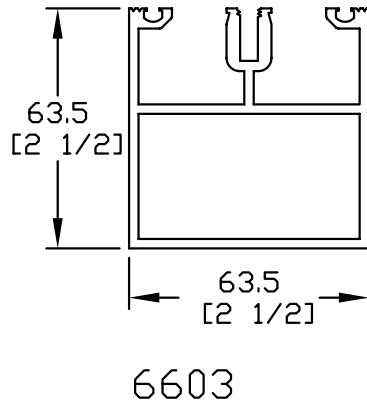
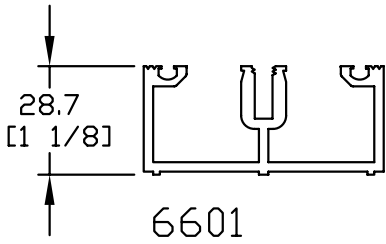
- ° Framing shall be installed, secured and glazed by an experienced crew.
- ° Set framing level, plumb, square and aligned with other work, in accordance with approved shop drawings and manufacturer's installation instructions and published glazing standards.
- ° All perimeter joints shall be sealed and caulked with approved sealant materials to ensure a weather-tight installation.

### Protection and Cleaning

- ° All work shall be protected against damage during and after installation.
- ° After installation all exposed surfaces shall be cleaned of all contaminants.
- ° The General Contractor is responsible for protection and final cleaning.

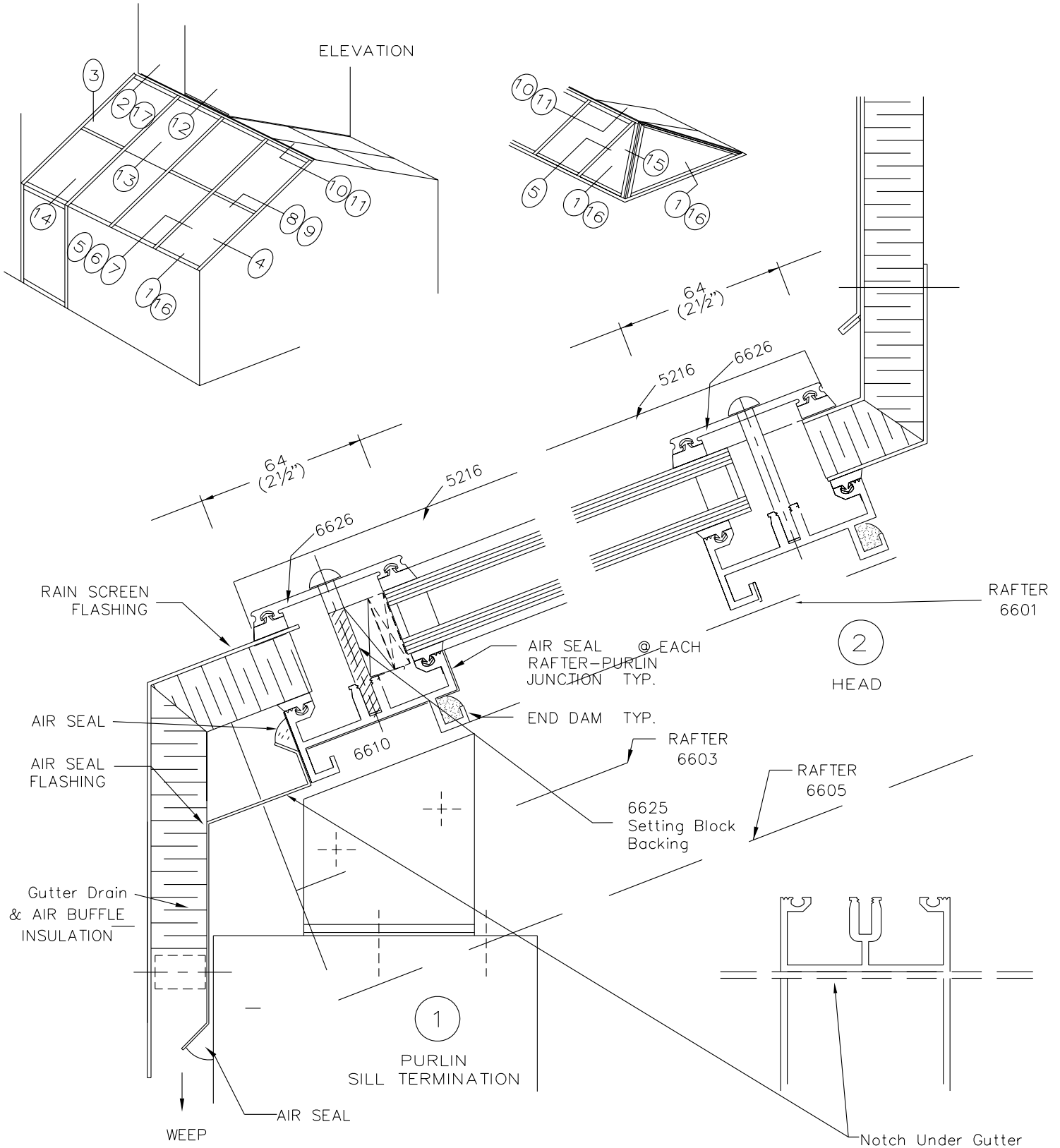


6625  
Setting Block  
Backing



SCALE 1:2

# 6600 SERIES SKYLIGHT FRAMING SYSTEM



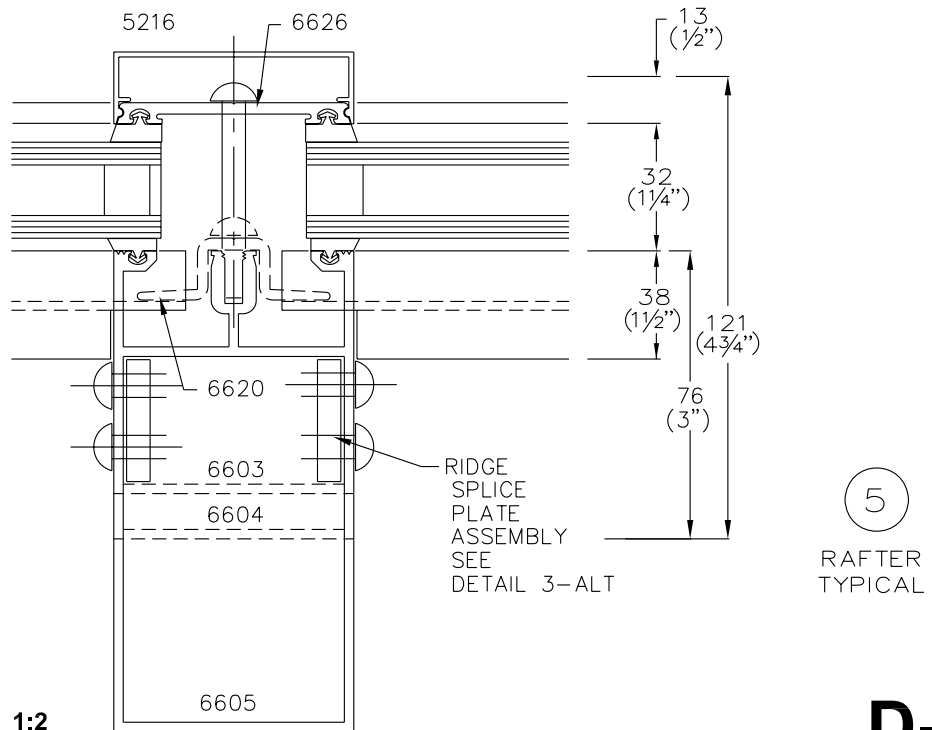
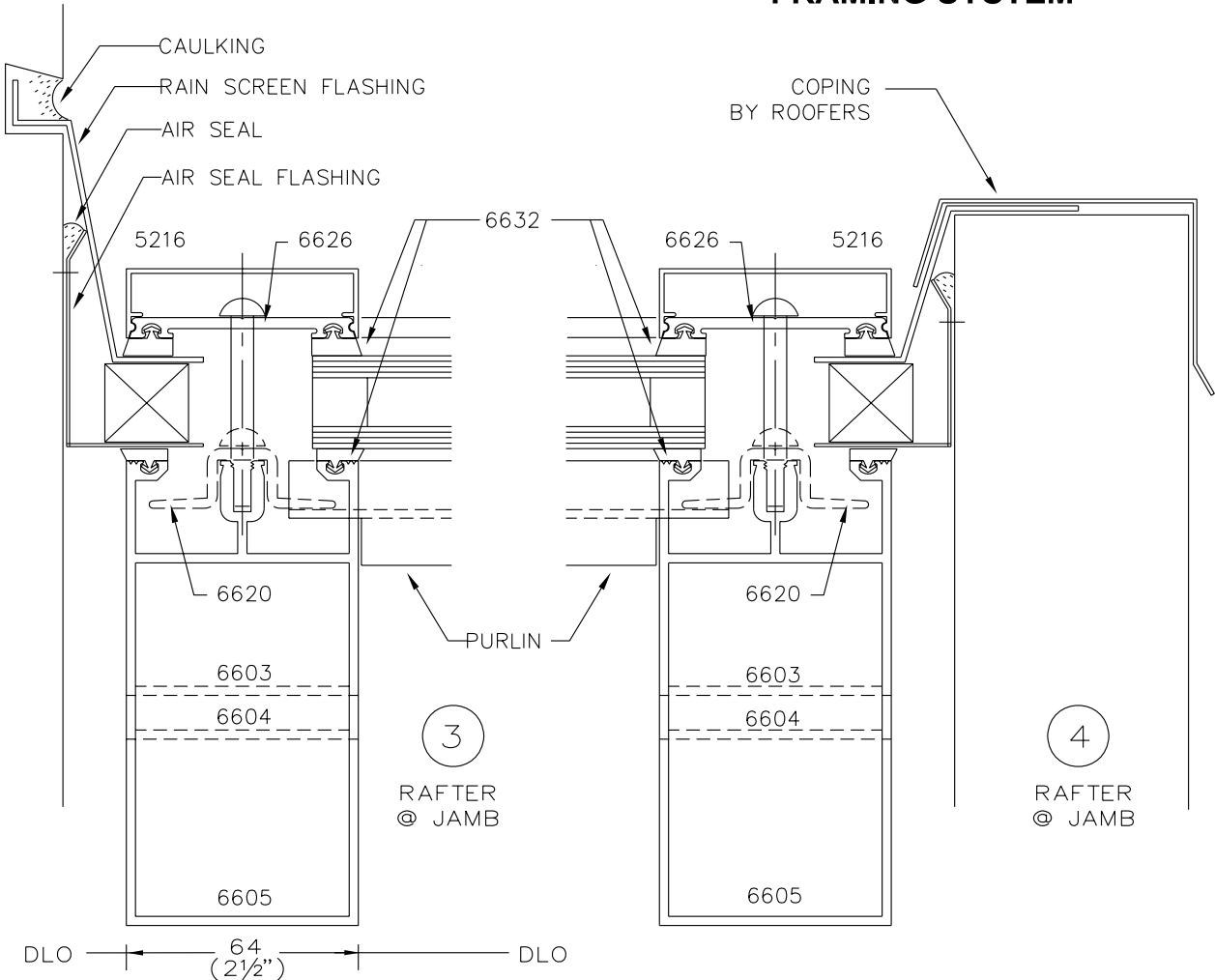
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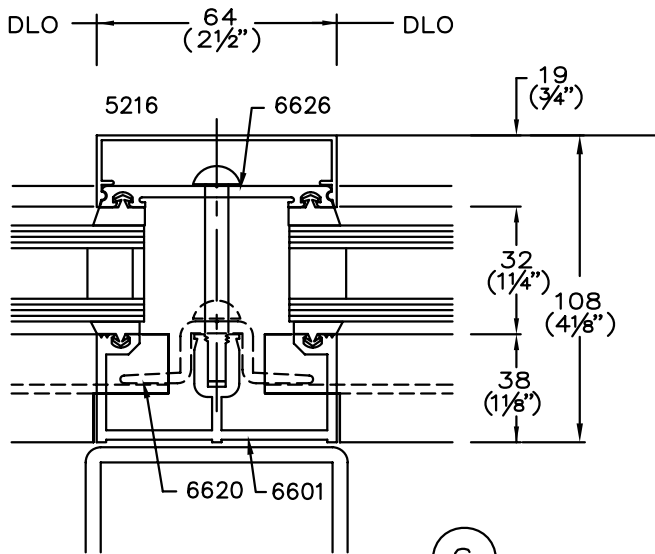
SECTION-PAGE

**6600 SERIES  
SKYLIGHT  
FRAMING SYSTEM**



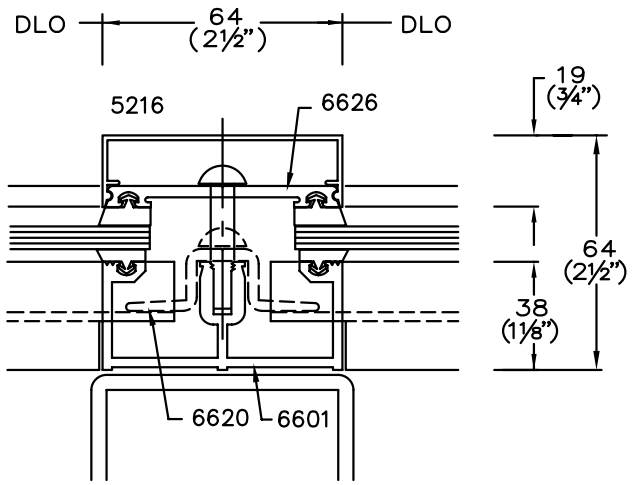
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**6600 SERIES  
SKYLIGHT  
FRAMING SYSTEM**



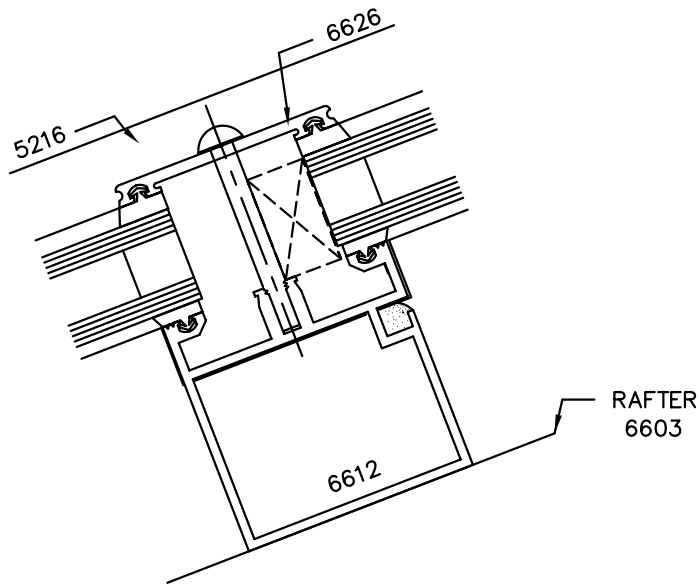
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SHALLOW RAFTER  
DOUBLE GLAZING



7

SHALLOW RAFTER  
SINGLE GLAZING

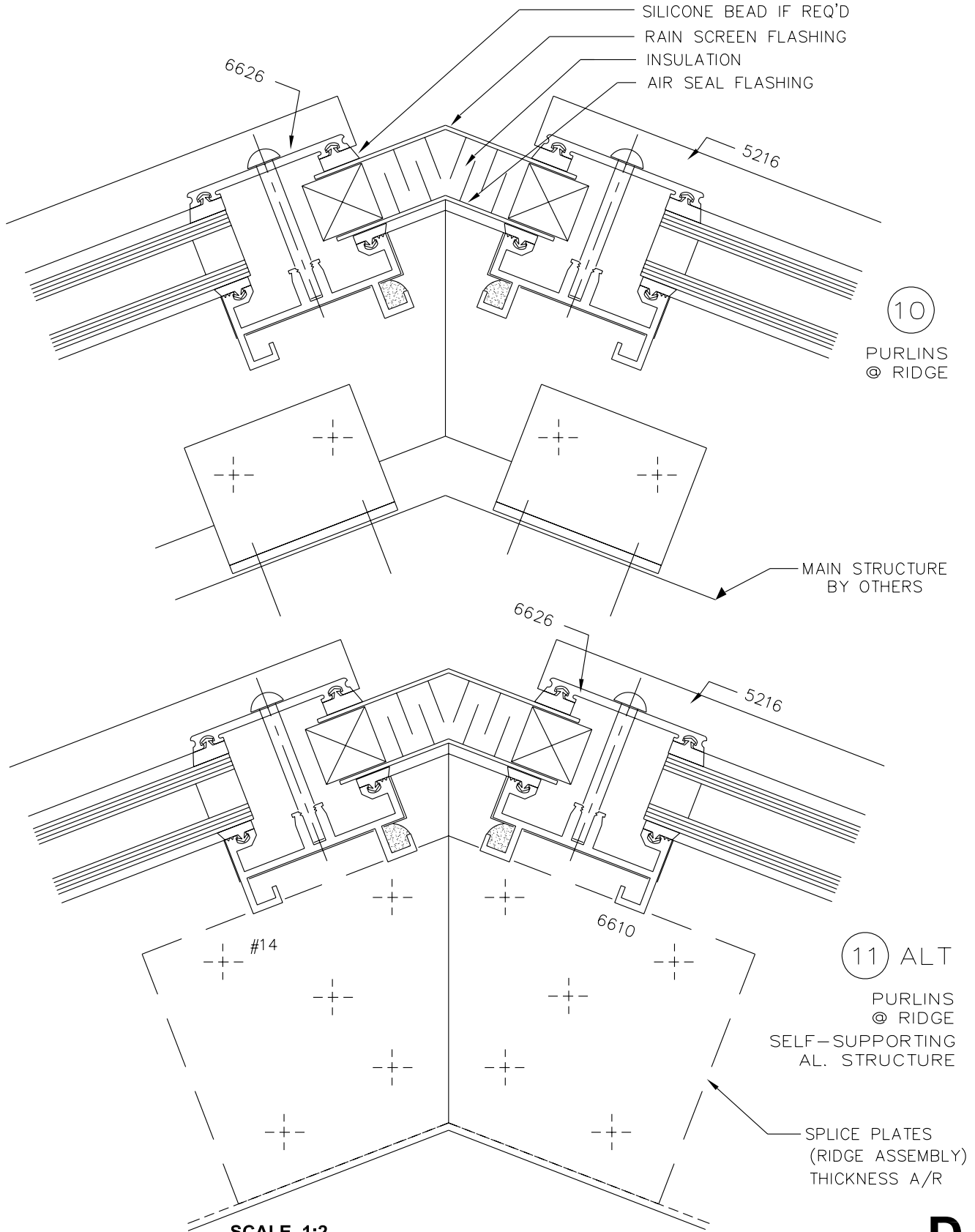


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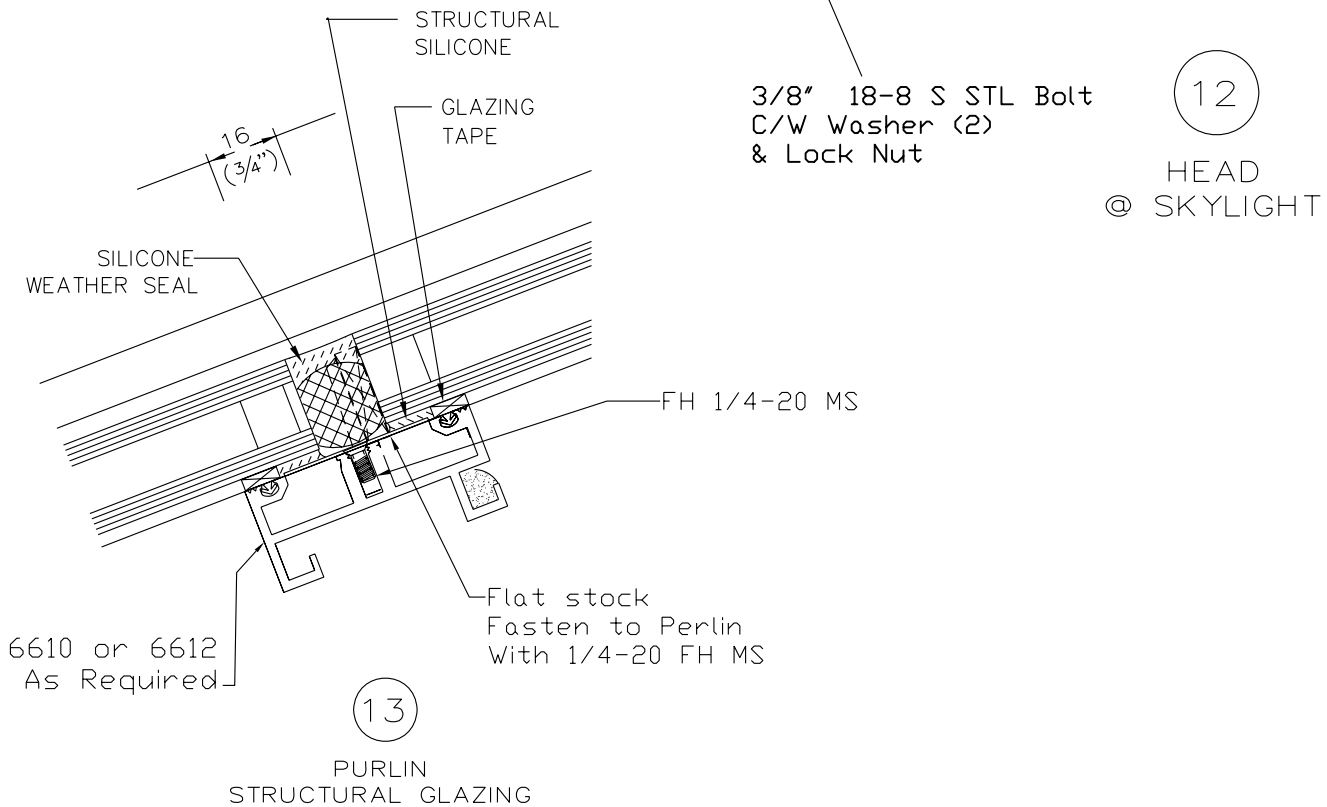
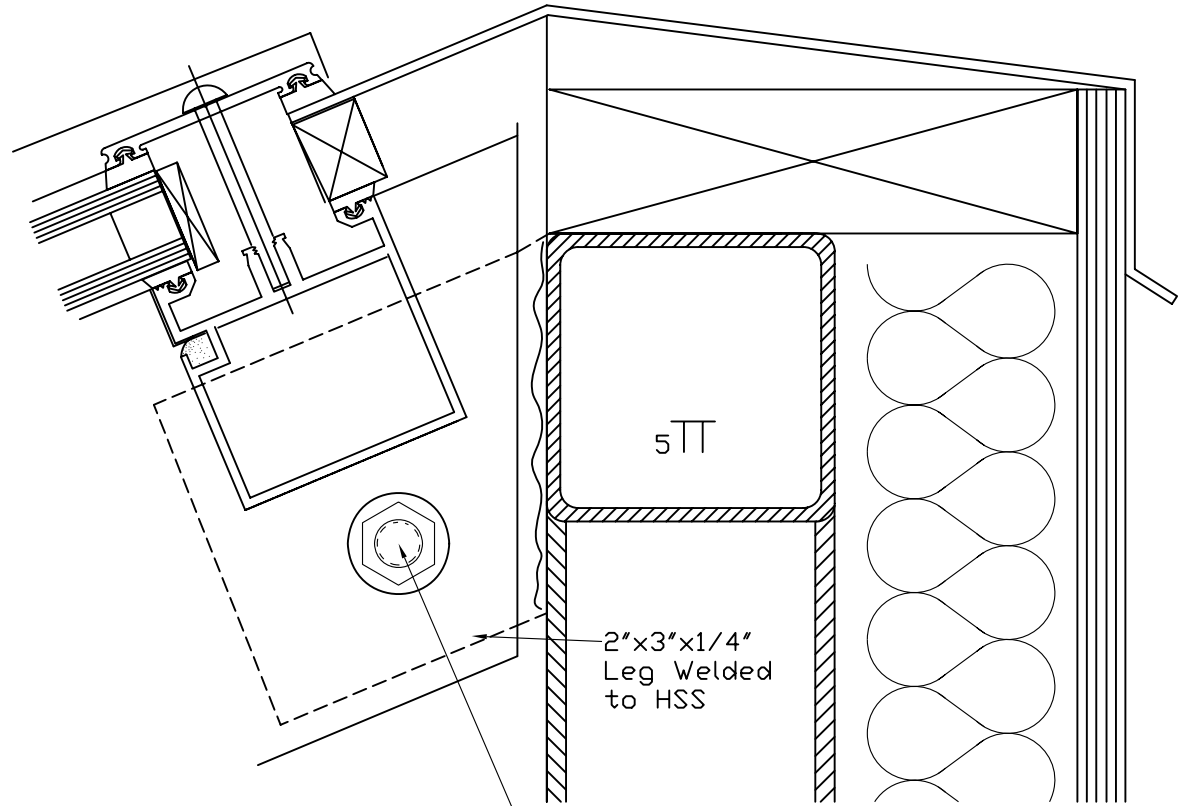
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CONVENTIONAL GLAZING

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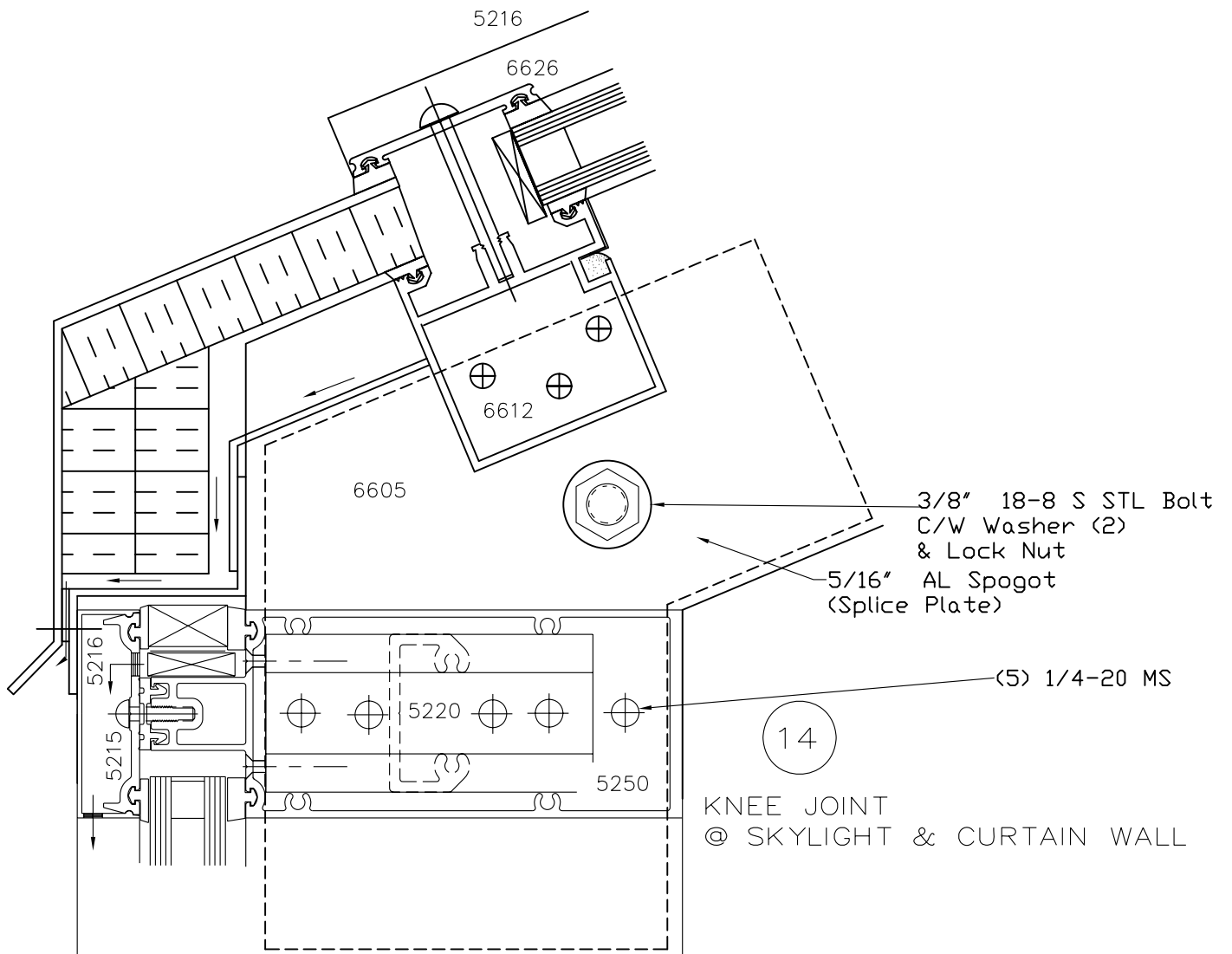
**6600 SERIES  
SKYLIGHT  
FRAMING SYSTEM**



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SKYLIGHT  
FRAMING SYSTEM**

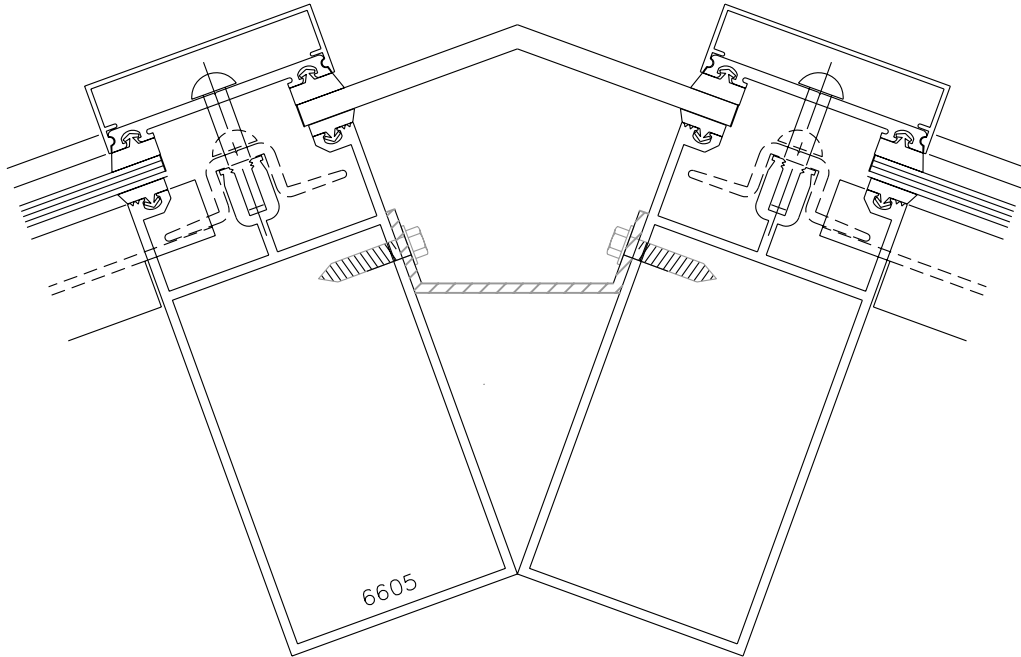


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SCALE 1:2





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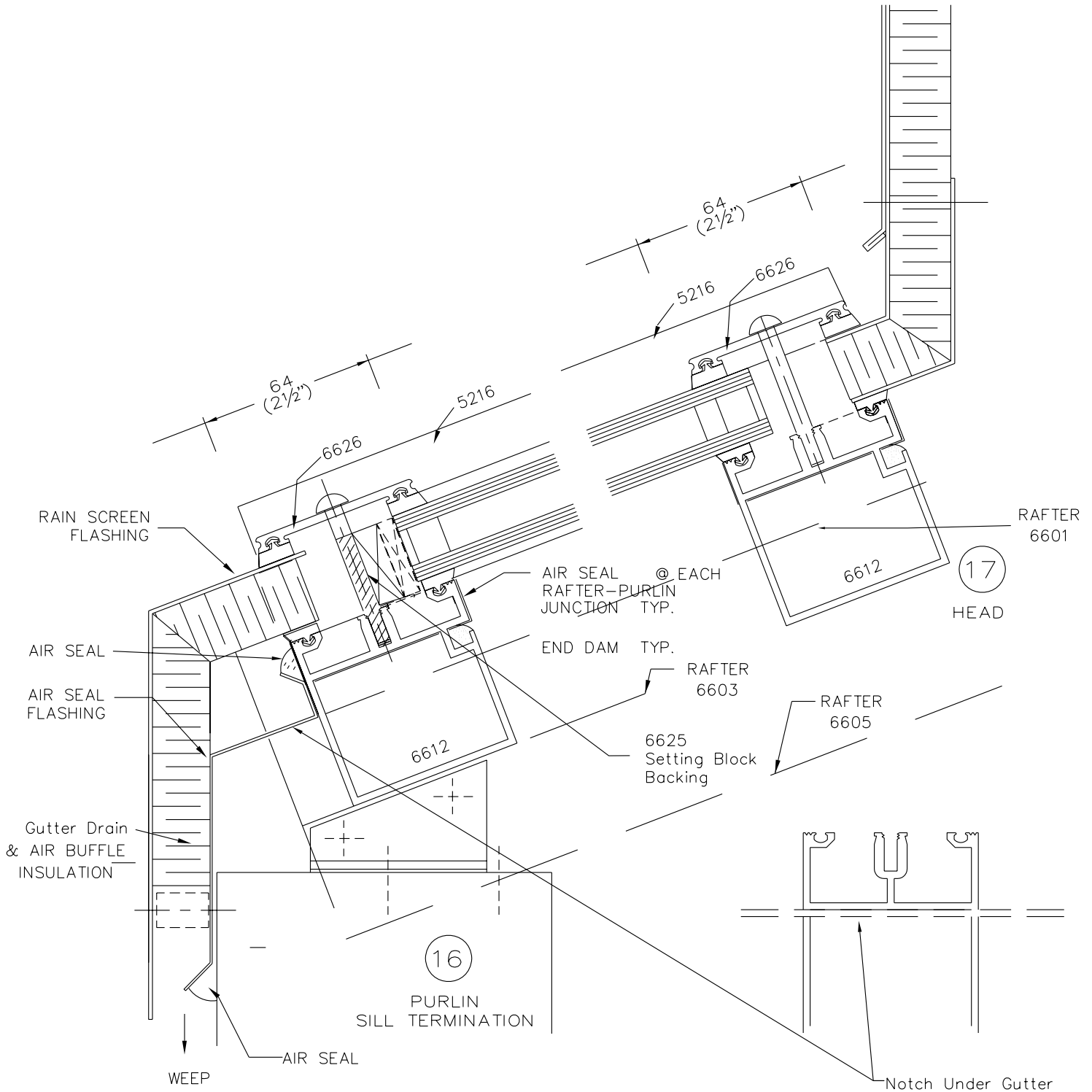
Hip

SCALE 1:2

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SECTION-PAGE



SCALE 1:2

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SECTION-PAGE

**A.T.MARCK & ASSOCIATES**  
 BUILDING SYSTEMS ENGINEERING LTD.  
 TEL/FAX (604) 469-6566

PROFILE: <b>6601</b>	MATERIAL: AA 6063 T5
A= 491 mm <sup>2</sup> (0.761 IN <sup>2</sup> )	I= 39684 mm <sup>4</sup> (0.09534 IN <sup>4</sup> )
C/L <sub>max</sub> = 15.67mm (0.617 IN)	S= 2532 mm <sup>3</sup> (0.1545 IN <sup>3</sup> )

MAX. ALLOWABLE RAFTER LENGTH (m/ft) FOR COMBINED SPECIFIED LOAD							
RAFTER SPACING	0.96 kPa	1.44 kPa	1.91 kPa	2.39 kPa	2.87 kPa	3.35 kPa	m ft
	20 PSF	30 PSF	40 PSF	50 PSF	60 PSF	70 PSF	
.45 m	1.40	1.25	1.10	1.05	0.97	0.91	
1.5'	4.6	4.1	3.6	3.4	3.2	3.0	
.60 m	1.30	1.10	1.00	0.93	0.87	0.82	
2.0'	4.3	3.6	3.3	3.0	2.9	2.7	
.75 m	1.20	1.05	0.97	0.88	0.81	0.74	
2.5'	3.9	3.4	3.2	2.9	2.7	2.4	
.90 m	1.10	0.98	0.87	0.81	0.73	0.66	
3.0'	3.6	3.2	2.9	2.7	2.4	2.2	
1.05 m	1.05	0.92	0.81	0.74	0.66	0.61	
3.5'	3.4	3.0	2.6	2.4	2.2	2.0	
1.20 m	1.00	0.89	0.78	0.66	0.64	0.56	
4.0'	3.3	2.9	2.6	2.2	2.1	1.9	
1.35 m	0.98	0.84	0.72	0.66	0.56	0.56	
4.5'	3.2	2.8	2.4	2.2	1.9	1.8	
1.50 m	0.94	0.78	0.70	0.61	0.54	0.52	
5.0'	3.1	2.5	2.3	2.0	1.8	1.7	
1.65 m	0.91	0.75	0.64	0.56	0.52	0.48	
5.5'	3.0	2.5	2.1	1.8	1.7	1.6	
1.80 m	0.89	0.74	0.64	0.54	0.53	0.47	
6.0'	2.9	2.4	2.1	1.8	1.7	1.5	

PROFILE: <b>6603</b>	MATERIAL: AA 6063 T5
A= 851 mm <sup>2</sup> (1.319 IN <sup>2</sup> )	I= 486430 mm <sup>4</sup> (1.1687 IN <sup>4</sup> )
C/L <sub>max</sub> = 32.07mm (1.263 IN)	S= 15169 mm <sup>3</sup> (0.926 IN <sup>3</sup> )

MAX. ALLOWABLE RAFTER LENGTH (m/ft) FOR COMBINED SPECIFIED LOAD							
RAFTER SPACING	0.96 kPa	1.44 kPa	1.91 kPa	2.39 kPa	2.87 kPa	3.35 kPa	m ft
	20 PSF	30 PSF	40 PSF	50 PSF	60 PSF	70 PSF	
.45 m	3.25	2.85	2.60	2.40	2.25	2.15	
1.5'	10.7	9.4	8.5	7.9	7.4	7.1	
.60 m	2.95	2.60	2.35	2.20	2.05	1.95	
2.0'	9.7	8.5	7.7	7.2	6.7	6.4	
.75 m	2.75	2.40	2.20	2.00	1.90	1.80	
2.5'	9.0	7.9	7.2	6.6	6.2	5.9	
.90 m	2.60	2.25	2.05	1.90	1.75	1.60	
3.0'	8.5	7.4	6.7	6.2	5.7	5.2	
1.05 m	2.45	2.15	1.95	1.80	1.65	1.50	
3.5'	8.0	7.1	6.4	5.9	5.4	4.9	
1.20 m	2.35	2.05	1.85	1.65	1.50	1.40	
4.0'	7.7	6.7	6.1	5.4	4.9	4.6	
1.35 m	2.25	1.95	1.75	1.55	1.45	1.35	
4.5'	7.4	6.4	5.7	5.1	4.8	4.4	
1.50 m	2.20	1.90	1.65	1.50	1.35	1.25	
5.0'	7.2	6.2	5.4	4.9	4.4	4.1	
1.65 m	2.10	1.85	1.60	1.40	1.30	1.20	
5.5'	6.9	6.1	5.2	4.6	4.3	3.9	
1.80 m	2.05	1.75	1.50	1.35	1.25	1.15	
6.0'	6.7	5.7	4.9	4.4	4.1	3.8	

- 1/ UNIFORM (RECTANGULAR) LOAD DISTRIBUTION
- 2/ BASED ON L/175 MAX ALLOWABLE DEFLECTION  
OR F<sub>y</sub> = 110 MPa FOR AA 6063 T5
- WHICHEVER IS LESS - CONFORMING TO CAN3-S157-M83
- 3/ FOR ESTIMATING PURPOSES ONLY

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PROFILE: <b>6604</b>	MATERIAL: AA 6063 T5 REINFORCING MAT:
A= 874 mm <sup>2</sup> (1.35 IN <sup>2</sup> )	I= 534663 mm <sup>4</sup> (1.285 IN <sup>4</sup> )
C/L <sub>max</sub> = 40.6 mm (1.6 IN)	S= 13268 mm <sup>3</sup> (0.804 IN <sup>3</sup> )

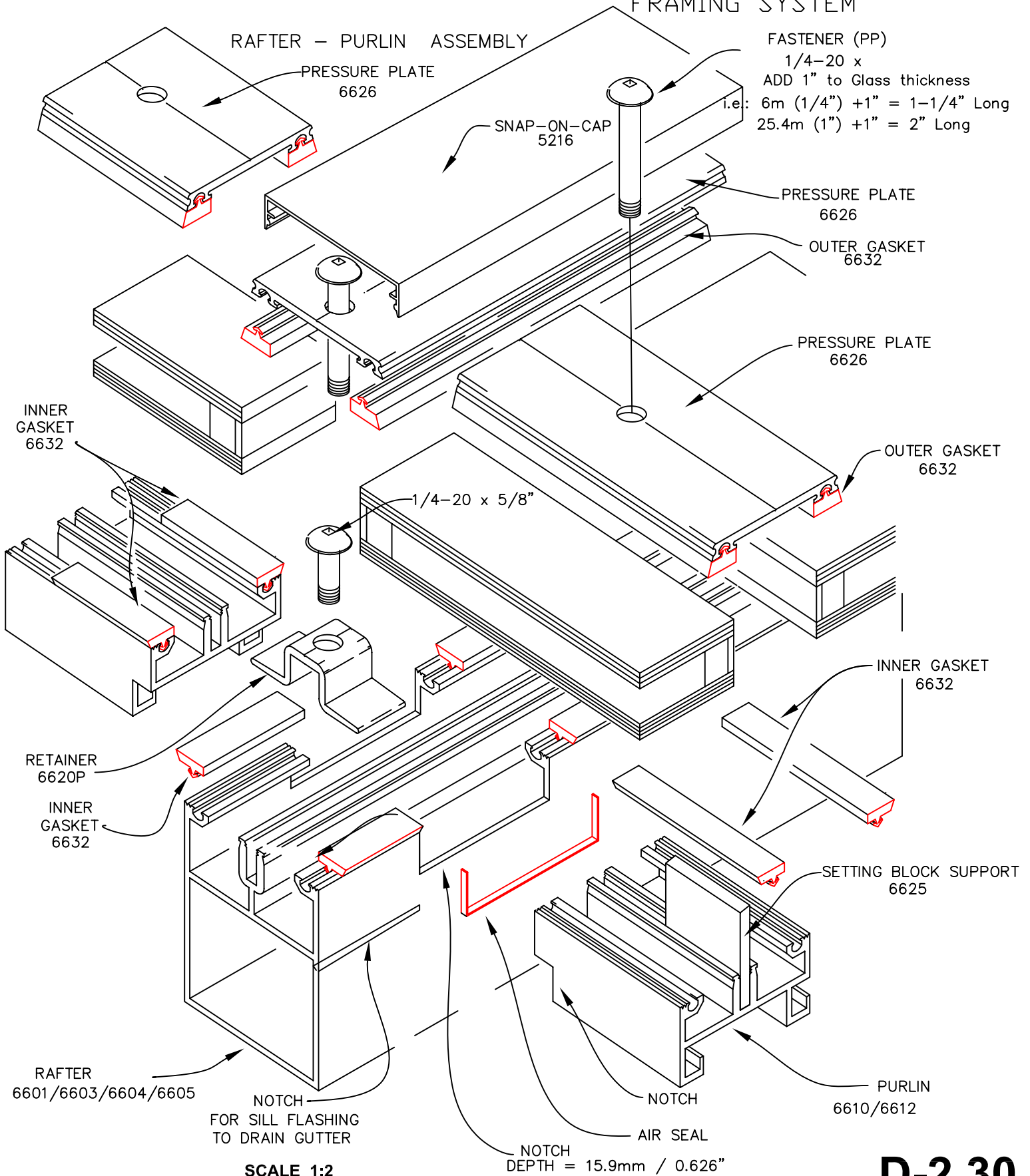
MAX. ALLOWABLE RAFTER LENGTH (m/ft) FOR COMBINED SPECIFIED LOAD							
RAFTER SPACING	0.96 kPa	1.44 kPa	1.91 kPa	2.39 kPa	2.87 kPa	3.35 kPa	m ft
	20 PSF	30 PSF	40 PSF	50 PSF	60 PSF	70 PSF	
.45 m 1.5'	3.35 11.0	2.95 9.7	2.65 8.7	2.50 8.2	2.30 7.5	2.15 7.1	
.60 m 2.0'	3.05 10.0	2.65 8.7	2.45 8.0	2.20 7.2	2.00 6.6	1.85 6.1	
.75 m 2.5'	2.85 9.4	2.45 8.0	2.20 7.2	1.95 6.4	1.80 5.9	1.65 5.4	
.90 m 3.0'	2.65 8.7	2.30 7.5	2.00 6.6	1.80 5.9	1.65 5.4	1.50 4.9	
1.05 m 3.5'	2.55 8.4	2.15 7.1	1.85 6.1	1.65 5.4	1.50 4.9	1.40 4.6	
1.20 m 4.0'	2.40 7.9	2.00 6.6	1.75 5.7	1.55 5.1	1.40 4.6	1.30 4.3	
1.35 m 4.5'	2.30 7.5	1.90 6.2	1.65 5.4	1.45 4.8	1.35 4.4	1.25 4.1	
1.50 m 5.0'	2.20 7.2	1.80 5.9	1.55 5.1	1.40 4.6	1.25 4.1	1.15 3.8	
1.65 m 5.5'	2.10 6.9	1.70 5.6	1.50 4.9	1.30 4.3	1.20 3.9	1.10 3.6	
1.80 m 6.0'	2.00 6.6	1.65 5.4	1.40 4.6	1.25 4.1	1.15 3.8	1.05 3.4	

PROFILE: <b>6605</b>	MATERIAL: AA 6063 T5 REINFORCING MAT:
A=1260 mm <sup>2</sup> (1.953 IN <sup>2</sup> )	I= 2645730 mm <sup>4</sup> (6.3564 IN <sup>4</sup> )
C/L <sub>max</sub> = 64.0 mm (2.52 IN)	S= 41337 mm <sup>3</sup> (2.523 IN <sup>3</sup> )

MAX. ALLOWABLE RAFTER LENGTH (m/ft) FOR COMBINED SPECIFIED LOAD							
RAFTER SPACING	0.96 kPa	1.44 kPa	1.91 kPa	2.39 kPa	2.87 kPa	3.35 kPa	m ft
	20 PSF	30 PSF	40 PSF	50 PSF	60 PSF	70 PSF	
.45 m 1.5'	5.75 18.9	5.00 16.4	4.55 14.9	4.25 13.9	3.95 13.0	3.75 12.3	
.60 m 2.0'	5.20 17.1	4.55 14.9	4.15 13.6	3.85 12.6	3.55 11.6	3.30 10.8	
.75 m 2.5'	4.85 15.9	4.20 13.8	3.85 12.6	3.50 11.5	3.20 10.5	2.95 9.7	
.90 m 3.0'	4.55 14.9	3.95 13.0	3.55 11.6	3.20 10.5	2.90 9.5	2.70 8.9	
1.05 m 3.5'	4.30 14.1	3.75 12.3	3.30 10.8	2.95 9.7	2.70 8.9	2.50 8.2	
1.20 m 4.0'	4.15 13.6	3.55 11.6	3.10 10.2	2.75 9.0	2.50 8.2	2.35 7.7	
1.35 m 4.5'	3.95 13.0	3.35 11.0	2.90 9.5	2.60 8.5	2.35 7.7	2.20 7.2	
1.50 m 5.0'	3.85 12.6	3.15 10.3	2.75 9.0	2.45 8.0	2.25 7.4	2.10 6.9	
1.65 m 5.5'	3.70 12.1	3.05 10.0	2.65 8.7	2.35 7.7	2.15 7.1	2.00 6.6	
1.80 m 6.0'	3.55 11.6	2.90 9.5	2.50 8.2	2.25 7.4	2.05 6.7	1.90 6.2	

- 1/ UNIFORM (RECTANGULAR) LOAD DISTRIBUTION
- 2/ BASED ON L/175 MAX ALLOWABLE DEFLECTION  
OR F<sub>y</sub> = 110 MPa FOR AA 6063 T5
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# 6600 SERIES SKYLIGHT FRAMING SYSTEM



## D-2.30

SECTION-PAGE